

CLAIMS**CLAIMS:****1. (Original) An optical navigation device comprising:**

a coherent light source for illuminating a surface with a light beam at an angle of illumination with respect to said surface; and

a detector positioned at an angle of reflection with respect to said surface operable to receive a reflected portion of said light beam from said surface, wherein said angle of reflection is substantially equal to said angle of illumination.

2. (Original) The device of Claim 1 wherein said coherent light source is a laser.**3. (Original) The device of Claim 2 wherein said laser is a VCSEL.****4. (Original) The device of Claim 1 wherein said detector is a CMOS imager.****5. (Original) The device of Claim 1 further comprising a collimation lens to improve the light collection efficiency.****6. (Original) The device of Claim 1 further comprising a lens positioned to be operable to image a diffraction image of said surface onto said detector.****7. (Original) The device of Claim 1 wherein said surface does not lie in the nominal image plane of said detector.**

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8. (Original) A system for controlling a positional pointer on a video screen of a computer using a mouse to detect relative motion with respect to a surface, said system comprising:

means for generating coherent specular reflection interference images, each said interference image being specific to a portion of said surface over which said mouse moves; and

means for converting said coherent specular reflection interference images into signals corresponding to relative motion between said mouse and said surface.

9. (Original) The system of Claim 8 wherein said generating means comprises a laser light source.

10. (Original) The system of Claim 8 wherein said means for converting comprises a processor located within said mouse.

11. (Original) The system of Claim 8 wherein said means for converting comprises a detector array located within said mouse.

12. (Original) The system of Claim 11 wherein said surface does not lie in the nominal image plane of said detector array.

13. (Original) The system of Claim 8 wherein said surface is chosen from paperlike surface, glossy type surface, painted surface and halftone surface.

14. (Original) The system of Claim 8 wherein said coherent specular reflection interference images comprise intensity variations.

15. (Original) A method for determining relative motion between an optical navigation device and a surface comprising:

providing a coherent light beam at an angle of illumination with respect to said surface for illuminating said surface; and

receiving a specularly reflected portion of said coherent light beam at an angle of reflection with respect to said surface, such that said angle of reflection is substantially equal to said angle of illumination.

16. (Original) The method of Claim 15 wherein said coherent light beam is provided by a laser.

17. (Original) The method of Claim 15 wherein said specularly reflected portion of said coherent light beam is received by a detector array.

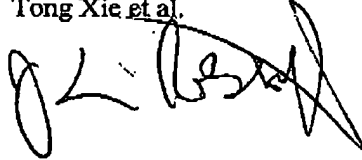
18. (Original) The method of Claim 15 further comprising generating a signal in response to the diffraction pattern of said specularly reflected portion of said coherent light beam.

19. (Original) The method of Claim 18 further comprising a processor to receive said signal and produce an output signal for controlling a positional pointer.

20. (Original) The method of Claim 17 wherein said surface does not lie in the nominal image plane of said detector array.

Respectfully Submitted,

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